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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/651,790	08/30/2000	Pary Baluswamy	CF/027 PROV.	2095

7590 10/22/2003
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EXAMINER

PIZARRO CRESPO, MARCOS D

ART UNIT PAPER NUMBER

2814

DATE MAILED: 10/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/651,790

Applicant(s)

BALUSWAMY ET AL.

Examiner

Marcos D. Pizarro-Crespo

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 May 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 1-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-21 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 0903 6) ☐ Other:

Application/Control Number: 09/651,790 (Non-Final Rejection)
Art Unit: 2814

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Attorney's Docket Number: 4307 US (99-1193)
Filing Date: 8/20/2000
Claimed Foreign Priority Date: none
Applicant(s): Baluswamy et al.
Examiner: Marcos D. Pizarro-Crespo

DETAILED ACTION

This Office action responds to the amendment in paper no. 25 filed on 5/28/2003.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37CFR1.17(e), was filed in this application after the final rejection in paper no. 24, mailed on 3/24/2003. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/16/2003 has been entered.

Acknowledgment

2. The amendment in paper no. 25, filed on 5/28/2003, in response to the Office action in paper no. 24, mailed on 3/24/2003, has been entered. The present Office action is made with all the suggested amendments being fully considered. Accordingly, pending in this Office action are claims 1-21.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Ackmann (US 6271602).

5. Regarding claim 16, Ackmann shows (see, e.g., figs. 4-7) all aspects of the instant invention including a method to form an overlay target including a series of raised lines, the method comprising:

- providing a substrate **200**
- depositing a resist layer over the substrate **200** (see, e.g., col.8/ll.21-35)
- patterning the resist layer to include a resist pattern defining the overlay target including a series of raised lines (see, e.g., col.8/ll.21-35)
- etching the substrate **200** to form the overlay target including the resist pattern with the series of raised lines (see, e.g., fig. 5 and col.8/ll.21-35)
- depositing a second layer of material **210** having an upper surface; the upper surface being substantially free, as deposited, of depressions in the portion thereof covering the overlay target

6. Regarding claim 17, Ackmann (see, *e.g.*, col.10/II.54) shows that the substrate comprises silicon.
7. Regarding claim 18, Ackmann shows that the resist layer may be deposited directly over the substrate (see, *e.g.*, col.8/II.21-35, col.12/II.56-61, and fig. 19).
8. Regarding claim 19, Ackmann shows the substrate **200** including a top surface and a bottom surface, and a material layer **208** deposited over the top surface of the substrate **200**.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being anticipated by Ackmann in view of Chiou.

12. Regarding claims 19 and 20, Ackmann shows most aspects of the instant invention (see paragraphs 5-7 above), except for the steps of depositing a material layer over the top surface of the substrate and depositing a resist layer over said material layer, wherein the step of etching the substrate comprises etching said material layer. He, however, shows that the resist layer may be deposited directly over the substrate (see, e.g., col.8/II.21-35, col.12/II.56-61, and fig. 19). Chiou (see, e.g., col.3/II.31-50), on the other hand, teaches that depositing said material layer between the substrate and the resist layer can protect Ackmann's substrate from the etching step to follow.

Accordingly, it would have been obvious at the time of the invention to one of ordinary skill in the art to deposit a material layer between the substrate and the resist layer of Ackmann, as suggested by Chiou, to protect the substrate.

13. Claims 21 is rejected under 35 U.S.C. 103(a) as being anticipated by Ackmann in view of Gandhi.

14. Regarding claim 21, Ackmann shows most aspects of the instant invention (see paragraphs 5-8 above). He (see, e.g., col.8/II.21-35), however, fails to specify the etching technique he uses to form the overlay target in the substrate. Gandhi (see, e.g., pp.589), on the other hand, teaches that using wet chemical etching have the advantage of keeping residual surface contamination to a minimum.

Accordingly, it would have been obvious at the time of the invention to one of ordinary skill in the art to use wet chemical etching to form the overlay target in the

process of Ackmann, as suggested by Ghandhi, to minimize residual surface contamination.

Response to Arguments

15. Applicant's arguments with respect to claims 16-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion


16. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. Papers should be faxed to Art Unit 2814 via the Art Unit 2814 Fax Center located in Crystal Plaza 4, room 3C23. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(703) 308-7722** or **-7724**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Marcos D. Pizarro-Crespo** at **(703) 308-6558** and between the hours of 9:30 AM to 8:00 PM (Eastern Standard Time) Monday through Thursday or by e-mail via Marcos.Pizarro@uspto.gov. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy, can be reached on (703) 308-4918.

18. Any inquiry of a general nature or relating to the status of this application should be directed to the **Group 2800 Receptionist** at **(703) 308-0956**.

19. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/797 438/401, 462, 704, 706, 709-711, 719, 745, 783, 975	10/10/2003
Other Documentation:	
Electronic Database(s): EAST (USPAT, EPO, JPO)	10/10/2003


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